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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,250	03/07/2001	Hyoung Gon Kim	7114	4702

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Shlesinger Arkwright & Garvey LLP
3000 South Eads Street
Arlington, VA 22202

EXAMINER	
LU, TOM Y	

ART UNIT	PAPER NUMBER
2621	7

DATE MAILED: 11/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/744,250	KIM ET AL.	
	Examiner	Art Unit	
	Tom Y Lu	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 March 2000* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 2-3 and 8-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. With regard to Claim 2, the examiner fails to understand the limitations cited in the claim. Please explain.

b. Claim 3 is rejected as being dependent upon Claim 2. In addition, Claim 3 fails to provide explanation with regard to $Z()$ and $f: R^2 - R^1$.

c. Claim 8 is rejected for the same reason given in Claim 2.

d. Claim 9 is rejected as being dependent upon Claim 8. In addition, Claim 9 fails to provide explanation with regard to $Z()$ and $f: R^2 - R^1$.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2, 4-8 & 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Bortolussi et al (U.S. Patent No. 6,292,575 B1).

e. Referring to Claim 1, Bortolussi discloses a color normalizer for normalizing color components of the color frame image to produce a normalized color frame image (Bortolussi at column 6, lines 40-44, lines 49-51 teaches "color table 60" as claimed "a color normalizer", which refines the ROI corresponding to the head. Note Bortolussi teaches the color component herein are flesh tone colors, which are red, green and blue as described at column 7, line 7. Also see column 16, lines 61-64); a color transformer coupled to the color normalizer for color transforming the normalized color frame image to a first color transformed frame image, said first color transformed frame image having intensity levels such that pixels corresponding to said moving object are emphasized (Bortolussi at column 7, lines 3-6, teaches "the color histogram for each color can be created. The color histogram is obtained by first reducing the 24-bit color to 18 bit color, generating the color histogram, and then transforming or converting it into ST color space from the intensity profile in the RGB space". By reducing the color bits from 24 to 18, the intensity levels of pixels corresponding to the ROI is emphasized as explained at column 7, lines 47-49); a frame delay coupled to the color transformer for delaying the first color transformed frame image by one frame, said delayed first color transformed frame image being a second color transformed frame image (Bortolussi at column 5, lines 47-49, discloses "a sequence of image frames from the camera 40 pass through a spatio-temperal filtering module which accentuates image locations which change with time", "spatio-temperal filtering module" acts as a frame delay, and "a sequence of images" herein include so-called "second color transformed frame image"); and a motion detector coupled to the color transformer and the frame delay for detecting the motion of the moving object (Bortolussi at column 9, lines 14-20, discloses "the detection stage 50" for detecting the motion of the moving object) and further intensifying the intensity levels of said

first color transformed frame image based on the detected motion (Bortolussi at column 10, lines 36-38, 45-49, teaches applying "center weighting window function" to intensify the intensity levels).

f. Referring to Claim 2, Bortolussi discloses wherein each pixel of the first color transformed frame image has an intensity level which is proportional to the proximity of the normalized color components of the pixel to the normalized color components said moving object (column 7, lines 30-37, note the histogram color distributions correspond to the claimed "proximity of the normalized color components").

g. Referring to Claim 4, Bortolussi discloses wherein said motion detector comprises means for detecting the motion of each pixel by counting pixels adjacent said each pixel whose intensity level differences between said first and second color transformed frame images are larger than a threshold value (Bortolussi at column 5, lines 47-49, and lines 57-60, teaches "a sequence of image frames from the camera 40 pass through a spatio-temperal filtering module which accentuates image locations which change with time." "The spatio-temperal filtered image then passes through a thresholding module which produces a binary motion image identifying the locations of the image for which the motion exceeds a threshold", the differencing function herein detects the motion of each pixel by counting pixels between two transformed frames images), and wherein, said intensity level of each pixel are further intensified by weighting said intensity level in accordance with said detected motion of said each pixel (Bortolussi at column 10, lines 36-39, discloses "center weighting window function ensures that the system maximizes the incorporation of essential image data into the correlation", also see column 10, lines 45-49).

h. Referring to Claim 5, Bortolussi discloses wherein said weighting is performed by fuzzy-AND operating said intensity level with said detect motion for said each pixel (column 8, line 45).

i. Referring to Claim 6, Bortolussi discloses wherein said threshold value is obtained, using a Sigmoid function as follows, wherein the function includes the intensity level of a pixel and a predetermined parameter (Bortolussi at column 5, lines 60-61, and lines 65-66, teaches the threshold selection function must contain the intensity level of pixel for binary image, and coordinate parameter for locating the areas of the image containing the most motion).

j. With regard to Claim 7, all limitations are addressed in Claim 1.

k. With regard to Claim 8, all limitations are addressed in Claim 2.

l. With regard to Claim 10, all limitations are addressed in Claim 4.

m. With regard to Claim 11, all limitations are addressed in Claim 5.

n. With regard to Claim 12, all limitations are addressed in Claim 6.

Allowable Subject Matter

3. Claims 3 and 9 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Reasons for allowance:

Claims 3 and 9 define a feature of the intensity level of said each pixel of the first color transformed frame image and the normalized color components of the pixel have a relationship as follows: $Z(x,y) = GF(r(x,y),(g(x,y))$ wherein (x, y) is a coordinate of said pixel in the normalized frame image, r (x, y) and g (x, y) are normalized color components of the pixel at the

coordinate (x, y), and GF () is a 2-dimensional Gaussian distribution function. This feature in Claims 3 and 9, which are the broadest allowable claims, is not taught or suggested by the art of record.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Turk et al, U.S. Patent No. 5,164,992, see figure 4, column 8, lines 25-61.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tom Y Lu whose telephone number is (703) 306-4057. The examiner can normally be reached on 8:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H Boudreau can be reached on (703) 305-4706. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Tom Y. Lu

LEO BOUDREAU
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600